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## **CO-COMPOSTING OF OLIVE MILL POMACE AND TURKEY MANURE: THEORETICAL RISK ANALYSIS TOWARDS A HACCP PLAN MODEL**

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### **Abstract**

3-phase olive pomace (OP) and turkey manure (TM) composts may contain microbiological, chemical, and physical hazards that can be transmitted to consumers of agricultural commodities from soil amended with this compost via the food chain. This work aims to carry out an analysis of the physical, chemical, and microbiological risks associated with the process of co-composting of OP and TM in order to propose a model of Hazard Analysis Critical Control Points (HACCP) plan that composting plants can easily use. The HACCP analysis of the OP and TM composting process led to the identification of a microbiological operational prerequisite program (PRPo) at the "Reception" step, and two microbiological critical points (CCP) at the "Mixing/windrowing" and "Thermophilic phase" steps. Other potential hazards evaluated as acceptable risks (pesticides, Trace Metal Elements (TME), and physical matters such as plastic should be checked less frequently because their risk may become unacceptable if the risk analysis's input elements change. Finally, we recommend carrying out further scientific research on the following topics: the levels of microbiological, chemical, and physical hazards in compostable raw materials and final composts, their persistence in soils amended by these composts, and their absorption by the most consumed crops. We also suggest broadening our research to include veterinary antibiotic residues, dioxin, and polycyclic aromatic hydrocarbons.

*Key words:* composting, food safety, HACCP, risk analysis, waste management

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